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**Subject:** Concerning environmental health data on Harvey sludge from Chron today  
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# What lurks in the sludge that Harvey left behind?

By [Allyn West](#)

September 20, 2017 Updated: September 21, 2017 8:45am

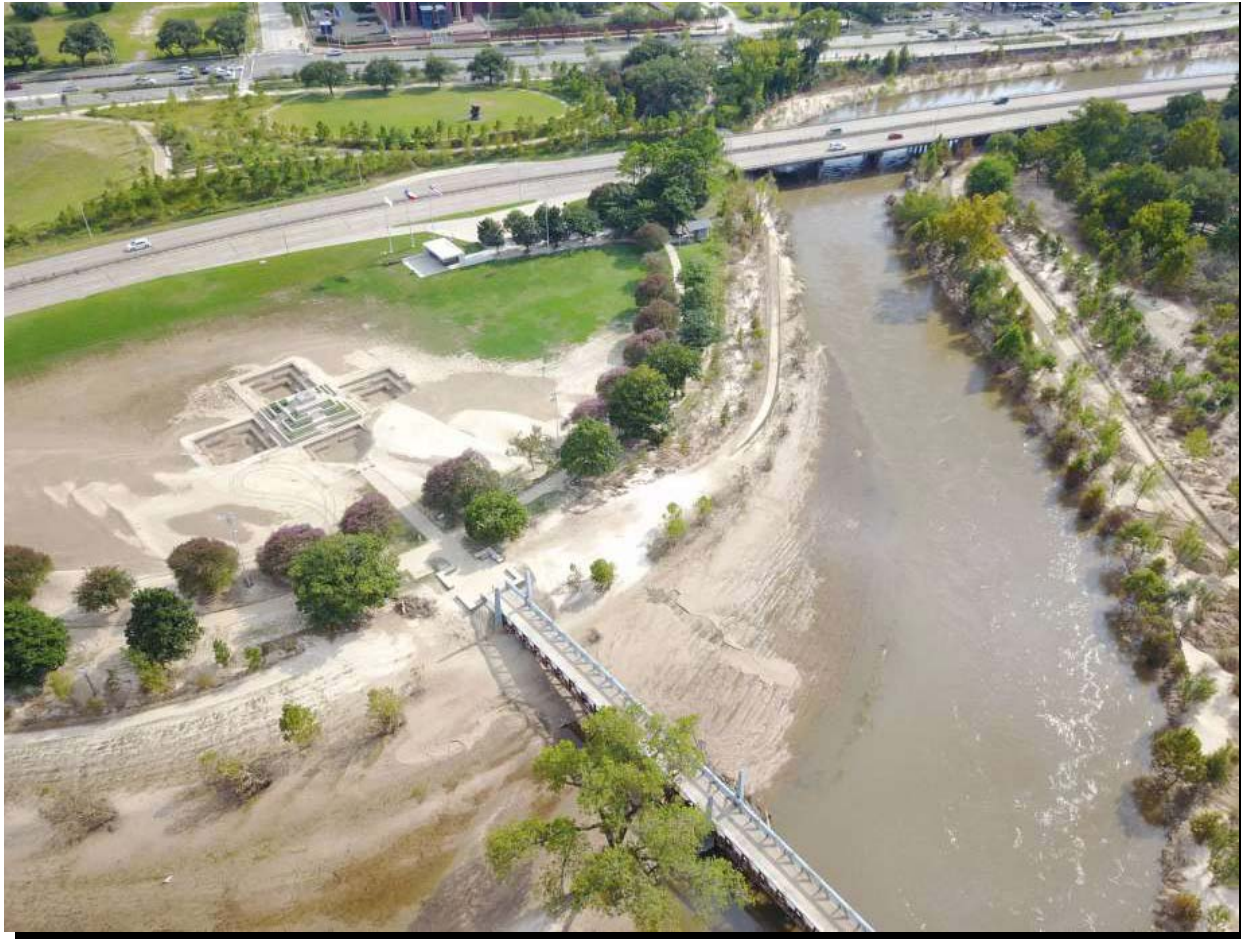


Photo: Asakura Robinson

## IMAGE 1 OF 5

Jesus Bautista Moroles's Houston Police Officer Memorial on Buffalo Bayou is completely covered by sediment in this aerial photo from Friday, September 15, 2017.

All over the Houston area, as Harvey's floodwaters receded, they left behind sludge — a mix of grit and debris picked up from streets and sewers and eroded bayou banks.

Though that sediment sometimes appears to be as clean as sand — the [large deposits in Buffalo Bayou Park](#) are being described as "beaches" or "dunes" — it's definitely dirty, say experts.

How dirty, though — and whether the sediment is contaminated and poses environmental and health hazards — is still being determined.

The Texas Commission on Environmental Quality is testing the sediment only near known hazardous sites or industrial

facilities, not in homes or in parks, said Andrew Keese, a media spokesperson.



Photo: ERIC THAYER, NYT

Winifred Hamilton surveys floodwaters covering a neighborhood in Houston on Sept. 5, 2017.

"We need the data," said Lauren Stadler, a Rice University professor who received a \$200,000 grant from the National Science Foundation to study the chemical and microbial contaminants in Harvey's wake.

Buffalo Bayou Partnership will begin testing the sediment inside the park this week, said Anne Olson, the executive director. "Safety both for our staff and the public is a priority," she wrote in an email.

**ONE OF the challenges is** that what's in the sediment will vary from place to place. Given "the power and velocity" of Harvey's floodwaters, says Scott McCready, the SWA Group landscape architect who led the design of the new Buffalo Bayou Park, the sludge could include any particle that can be suspended in water — motor oil, gasoline, paint, household chemicals, even sewage. "It's a mixture of everything you can imagine in an urban neighborhood," he said.

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A limited test of the sediment was recently conducted downstream of Buffalo Bayou Park at a flooded house in Clayton Homes by Dr. Winifred Hamilton, a professor and researcher at Baylor College of Medicine.

The family of seven who lived there had had to evacuate.

Hamilton's team took samples from inside the kitchen, where the sediment was damp, and from the porch, where the sediment was dry.

She said that bacteria like *E. coli* and fecal coliform were found in the floodwaters, and heavy metals like arsenic, chromium, cadmium and lead in the sediment. Levels were even higher for sediment inside the house.

"Interior arsenic levels were two times higher, and cadmium was five times higher," she said.

"We don't want children playing in it," Hamilton said. "We don't want any children building sandcastles out of the sediment."

**HAMILTON ALSO urged those who** are mucking out houses or removing debris to take precautions.

"We're concerned what's going to happen with the sediment," she said.

As trucks remove debris now piled on curbs, she worries about the "blooms" of particulates released into the air. "Are

[workers] blowing it around?" she asks. "Getting it on their hands? Ingesting lead and cadmium, which is associated with poor birth outcomes?"

Ingesting or handling the potentially contaminated sediment could also lead to other health problems. At least 10 percent of muckers during Katrina reported diarrhea and other forms of gastrointestinal distress, she said.

Also common was a sore throat and "Katrina cough," a dry cough associated with "particulates ... lodging in the upper respiratory system."

"People are doing heroic things," she said. "There are lots of people out there helping. But there are significant environmental hazards."



Photo: Molly Glentzer

Though the sediment appears to be clean as sand, it is definitely dirty and potentially hazardous, experts say.

"There's stuff everywhere," said Robert Rayburn, the executive director of the Bayou Preservation Association. "It needs to be tested by the city and all governing agencies that oversee public health, and people need to be prudent."

Joe Stinebaker, the director of communications for Harris County Judge Ed Emmett, wrote in an email that the contents of the sediment need to be tested further. "[But] we have nothing to indicate there is anything particularly harmful [in it] — nor have we received any warnings it could be."

For now, though, as the mucking continues, Hamilton urged workers to be sure to wear adequate masks, heavy gloves and "full protective equipment."

**TRANSLATOR**

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Harvey's rain stopped. Then my partner's sundowning started.

She advised them to open windows and doors to encourage ventilation: "The air inside is going to be much more toxic than the air outside."

"Wash your clothes separately. Wash your face. Wash your hands."

Flu-like symptoms of fatigue and headaches will be common, she added. "But if you start running a fever, or any skin area starts swelling or is hot or turns to red, or if you have trouble breathing or start wheezing, see a doctor," she said. "And you shouldn't wait."

"In most cases, it's going to be minor. But if your immune system is compromised, or if you're very young or very old, or if you're not drinking enough decent water, your risk is elevated."

**HAMILTON'S ADVICE comes too late** for Jessica Miller, 37, who volunteered to help clean a house through the "Mud Army" Facebook group. At a west Houston condo owned by an 80-year-old woman who'd evacuated, Miller arrived ready to muck, armed with a mask, latex and work gloves, and heavy boots.

A slimy sludge covered everything, she said, even inside the refrigerator. Miller couldn't believe the stench: "It was just – foul."

The next day, she woke up in misery.

"My sinuses were completely stopped up. Achy body, headaches," she said. "I felt like I had the flu. I did nothing for two days."

Her symptoms lingered all week.

"There were probably 100 or more of these condos, and people were doing the same thing in each one of them," she said. "Should humans even be in this?"